18 April, 2001

MODIS sensor Working Group (MsWG) Summary

Attendance: Bob Evans, Bruce Guenther, Chris Moeller, Gary Toller, Jack Xiong, Jim Young, Mike Roberto, Roger Drake, Stuart Biggar, Vince Salomonson, Gwyn Fireman
Guest: Eugene Waluschka, GSFC, 301-286-2616

Scheduled Items

SD illumination on VIS FPA:

Gene provided an overview of the two most recent memos, and answered some questions.

Q: In a non-telecentric system, a solid angle area change should be observed – is it?
A: Yes – that distortion originates in the primary/secondary mirror handoff.

Action 0104-18: Examine variation in track (detector) direction for ratio of m1 values derived with SD screen open and closed, where possible.

RSB Degradation Implementation:

MCST proposes to use linear interpolation of m1 values for reprocessing, and linear extrapolation for forward processing.

Points clarified by Miami:

- Need December 2000 m1 tables ASAP in order to derive correction parameters to remove observed ocean band variations. Detector-to-detector variation is the largest factor; other corrections are applied to mirror side difference and to spectral band relative response.

Action 0104-19: Deliver December 2000 m1 tables to Miami ASAP, in the L1B processing input form (MOD02_Reflective_LUTs.hdf).

- Detector-to-detector variation may change over time; comparison of data sets needs to be made for each electronics side. In any case, detector-to-detector variation is seen as secondary to mirror side differences changing with time.

- Miami would prefer that linear interpolation be done over long time periods until other temporal variations are fully understood.

Other Items:

· We are unanimous on the proposed **Band 5 gain change**; the proposal will be presented to the MODIS Technical Team meeting on April 19.

- **LWIR PV VDET/ITWK test** scheduling will be discussed the MODIS Technical Team meeting.
- **RSB Reprocessing** will begin in June, though the DAAC may start Level 1 reprocessing earlier

Action 0104-20: Deliver any updated LUTs to the DAAC for RSB reprocessing (target date of May 1).

Around the Table

Xiong:

The SRCA SWIR crosstalk test is targeted for April 26, 2001. The test will have more than two levels, so possible Band 26 non-linearity may be characterized.

Platnick (by email):

Approves of the proposed Band 5 gain change. Expresses concern that the SWIR SF difference will not be fully understood before reprocessing is scheduled to begin.

Evans:

Comparing MODIS brightness temperature to AVHRR results. Midwave and thermal IR are close after applying corrections derived from December data; some remaining variations may be due to water vapor not being fully corrected for in one of the two instruments. These results differ substantially from radiative transfer models. Could remaining results be due to incomplete knowledge of RSR and/or blackbody emissivity? Moeller: The RSR was measured carefully and is not likely to be far off.

Miami also observes that temperatures are elevated at the end of scan. Has there been any change in Band 34 RVS? Xiong: RVS was derived from NAD-closed data taken 2000/112, and not changed since. Drake: Also consider whether changing over time, sector offsets, polarization issues.

Action 0104-21: Compare Band 34 RVS to Bands 33 and 35 RVS, and look at Band 34 trending averages.

Biggar:

Field trips were a washout due to bad weather. Working on 1.38 micron band validation, will have results next week. Xiong: Earlier validation results showed 10% difference in radiance between MODIS Band 6 (1.6 micron) and VIRS; this turned out to be only 3% difference in reflectance terms.

Guenther:

Q: What is the status of the Band 13hi & 14hi memo?

A: Draft was sent to Wayne and Mark Abbot; need to meet with Wayne. Add section on Band 14 noise, and tell Mark Abbot what could also be done with Band 13hi.

Action 0104-22: Add section on error analysis to Band 13hi & 14hi memo.

Xiong:

Q: How will working detectors on Aqua-MODIS be identified?
A: (SBRS) Ecal and SCRA tests will be run as part of the system-level tests, comparable to T/V 3 tests. Focal planes and the Radiative Cooler will be turned on, and functioning detectors will be found at each temperature.

Drake:

The first memo describing SDSM sun screen modeling results will be released on Friday; more tests will be run. Vignetting is modeled with pinholes constant at 21.5 mil diameter changing screen thickness from 5 to 5.5 mil gives better results.

Action 0104-23: Send MCST SDSM screen modeling results memos to SBRS.

Jack indicates that the MCST memo describes only screen rotation angle as a free parameter; models should also include relative position of the screen and aperture.

SBRS is devising the system-level test for FM-1, with attention to modeling appropriate spacecraft orientation. The program office has decided that Cold tests will be run at –22 degrees and Hot tests at +13 degrees.

compiled by G. Fireman 19 April, 2001